

CLAIMS:

1. A method of recording information as a pattern of marks and spaces on a recording track of a magneto-optical recording medium, said method comprising the steps of:

a) writing a mark region by having at least one sub-mark portion of a predetermined first length magnetized in a first direction substantially perpendicular to a recording surface of said recording medium and by having at least one adjacent sub-space portion of a predetermined second length magnetized in a second direction opposite to said first direction; and

b) changing the sum of said predetermined first and second lengths in dependence on said pattern of marks and spaces.

2. A method according to claim 1, wherein said changing step is performed for said mark region based on patterns of previous and/or following marks and spaces.

3. A method according to claim 2, wherein the length of said patterns of previous and/or following marks and spaces is a few hundred nanometers.

4. A method according to any one of the preceding claims, wherein said sum of said predetermined first and second lengths is set to be greater than a channel bit length.

5. A method according to claim 4, wherein the number of said sub-mark portions in said mark region is smaller than the number of channel bits which correspond to the run length of said mark region.

6. A method according to claim 5, wherein a mark region with a run length corresponding to five channel bits is written with two or three sub-mark portions separated by corresponding sub-space portions.

7. A method according to any one of the preceding claims,
wherein said magneto-optical recording medium is a domain expansion
recording medium comprising a storage layer and a readout layer.

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8. A method according to claim 7, further comprising the step of setting the
distance between said storage and readout layers based on a difference between the largest and
the lowest values of a stray field along said mark region.

10 9. A recording apparatus for recording an information as a pattern of marks and
spaces on a recording track of a magneto-optical recording medium, said apparatus comprising:

a) writing means for writing a mark by having at least one sub-mark portion of
a first predetermined length of said magneto-optical recording medium magnetized in a first
direction substantially perpendicular to the recording surface of said recording medium and
15 by having at least one adjacent sub-space portion of a second predetermined length
magnetized in a second direction opposite to said first direction; and

b) control means for changing the sum of said predetermined first and second
lengths in dependence on said pattern of marks and spaces.

20 10. A recording apparatus according to claim 9,
wherein said control means is arranged to change said sum of said
predetermined first and second lengths in dependence on the patterns of previous and/or
following marks and spaces.

25 11. A recording apparatus according to claim 9 or 10,
wherein said control means is arranged to set the number of said sub-mark
portions in said mark region to a value smaller than the number of channel bits which
correspond to the run length of said mark region

30 12. An apparatus according to any one of claims 9 to 11,
wherein said recording apparatus is a disk player for a magneto-optical disk to
be read by a domain expansion technique.

13. A magneto-optical recording medium on which an information is recorded on a recording track as a pattern of marks and spaces, wherein a mark region comprises at least one sub-mark portion of a first predetermined length magnetized in a first direction substantially perpendicular to the recording surface of said recording medium and at least one adjacent sub-space portion of a second predetermined length magnetized in a second direction opposite to said first direction, and wherein the sum of said predetermined first and second lengths is changed along said recording track .

14. A recording medium according to claim 13,

wherein said magneto-optical recording medium is a magneto-optical disk to be read by a domain expansion technique.